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ABSTRACT

The role of play in disabled and nondisabled toddlers was investigated and the impact of maternal stress on the dynamics of mother-child interactions was evaluated in a study involving 20 mother-toddler dyads (10 of which consisted of physically disabled toddlers and their mothers). Results of interviews revealed that mothers of disabled children reported experiencing a wider range of stress symptoms. When mothers were grouped according to stress level, mothers in the higher stress group tended to show more negative affect in free play more often than lower stress mothers. Higher stress mothers were also less responsive to their children in both play and teaching situations and did not differentiate in their eliciting behavior between the requirements of play and teaching situations. Children of highly stressed mothers exhibited more amplifying behavior, i.e., engaging in self-initiated activities more of the time than children of lower stressed mothers. References are appended. (CL)

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The Effects of Disability and Stress on Mothers and Child Interactions

Karen Oster

Stress is a word frequently used in the literature on the impact of a disabled child on the family. Stress has been conceptualized as a stimulus event, ie. "the presence of a child with a disability in the family is in itself a stress factor" (Bradshaw and Lawton, 1978, p.33), as a response, ie. "this event (the birth of a disabled child) produces one of the most successful experiences that a family can endure" (Howard, 1980, p.275) and as an intervening variable, ie. "the depressed caregiver will be unable to play with her own behaviour in order to play with her infant" (Stern, 1977, p.119).

The model developed by Bradshaw and Lawton (1978) functions to locate the various types of stress. They indicate that the presence of a child with a disability in the family is, in itself, a stress factor. However, it is the special problems which arise such as physical and emotional strain and pragmatic issues such as transport, which are the stress events. These stress events result in the articulation of "felt needs" such as the need for support, information, money, etc. The net result is the stress effect which is the physical, emotional and financial consequences. Bradshaw lists these effects in three categories: (i) physical burdens of care, (ii) financial strain, and (iii) emotional and psychosomatic symptoms.

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It is the third category of emotional and psychosomatic symptoms which is most often discussed in the research literature in relationship to the disabled child and the family.

However, the literature results are equivocal. An early study by McMichael (1971) reported over 50% of the 50 mothers reported experiencing emotional difficulties, anxiety and depression. A more recent study by Burden, in 1980, supported McMichael's results of 46% of their sample of mothers (N=157) indicated a clinically discernable level of anxiety and 27% had scores indicative of not functioning well. Other studies such as Waisbren(1980), Gath (1978) and Freeston(1971), found few differences in anxiety scores in mothers of disabled children. The longitudinal ruebella study by Korn, Chess and Fernandez(1980) utilized an actuarial methodological approach to develop a family distress index, listing those factors which were predictive of families most at risk or vulnerable to stress. They found several factors associated with family distress. These factors fell into two categories; characteristics of the child and socio-familial factors. Child factors included the child's age, the number of disabling problems, the presence of hearing impairment, retardation or behaviour disorders and the child's temperament. The socio-familial factor associated with family distress was the families' perception of the adequacy of available support services.

Their research and the work of others begins to point to a number of factors which may influence the nature and intensity of parental responses.

Age of onset of the disability (Jobling, 1975, Steinhauer, 1974) birth order of the disabled child (Goddard & Robissow, 1977), the length of time a parent has knowledge of the problem (Goldberg, 1979), the type of disability (Holroyd, 1976; Rutter, Tizzard, 1970), the visibility of the disability (Jones, 1980), and the severity of the disbility (Cook, 1963).

Results of studies which examine the "emotional and psychosomatic" effects of the disabled child on the family remains difficult to interpret. The responses and reactions of families studied have covered a variety of child ages from preschool through schoolage children. Another difficlty in interpretation arises out of methodological differences. Many studies have used the Rutter scale, other have used their own interviews and questionnaires. It is difficult to determine if questions and coding are comparable with Rutter's or with other scales of stress, ie. the Manifest Anxiety Scale, Morbid Inventory (Salkin, 1973 as cited in Burden, 1980). The results of studies of families who have children with various disabilities have been equivocal; although the few studies done with families having physically disabled young children (McMichael, 1971, Tew & Lawrence, 1975 and Burden (1980)) report higher levels of stress as reported by mothers.

Research relating to mother and child interaction has increased over the past few years. There has been an increase in studies of patterns of interactions between children with disabilities and their mothers (and/or fathers). The early work of Shere and Kastenbaum (1968) using extensive observation coding sparked interest in more experimental work such as that of Kogan and Tyler (1973) and Kogan, Tyler and Turner (1974). Cerebral palsy

and mothers and Jones (1980) work with children with Downs Syndrome and their mothers. The picture which emerges from this literature is fascinating and complex. It would appear that the patterns of interactions between mothers and disabled young children are qualitatively and quantitatively different from those of nondisabled mothers and children.

The purpose of this study was to build on this earlier work by extending the range of behaviours observed, to investigate the role of play (self-initiated activity) of disabled and nondisabled toddlers, and secondly to explore the impact of maternal stress on the dynamics of the mother and child interactions.

As an exploratory study, this research was interested in the following questions:

1) Do mothers of physically disabled toddlers report more stress symptoms than mothers of nondisabled toddlers? Does the range of reported symptoms differ?

2) Does high maternal stress impact on the interaction between a mother and her child? If so, in what areas? Is the nature of the impact similar for both the disabled and nondisabled child?

Methods

Twenty mother-toddler dyads (16-34 months x age 2.02) were selected from the waiting list of a local integrated nursery program. Half of the dyads were physically disabled todders and their mothers, the other 10 were not.

The two groups were matched as closely as possible for chronological age. There were six boys and four girls in each group.

Five of the disabled children had been diagnosed as having cerebral palsy. (2 with hemiplegias, 2 with spastic diplegia, 1 having quadraplegia), 3 were diagnosed as hypotonic and 2 had spina bifida and hydrocephalus. All 10 children had marked motor delays, and all but one had marked language delay. All children were capable of the play activities expected of them for the study.

Families received a letter informing them of the research project and requesting their participation. This was followed by a telephone call to obtain the families agreement to participate and a date and time was arranged for them to come to the school where the study was being conducted.

Two situations were used based on the contrived situational assessment model (Santostefano, 1968). In the 'free play' situation, mother and child were given an opportunity to utilize the play materials in the room any way they wished. The room was equipped with a variety of play materials both which met the following criteria: more structured and less structured object play, developmentally age appropriate, equally appropriate for boys and girls, visually attractive and appropriate for interactive and imaginary play, variety complexity and novelty.

The two 10 minute activity siutations were coded 'free play' and 'teaching', utilizing an electronic event recorder and the reciprocol coding system developed by Ira Gordon. Following the activity sessions, the mothers were asked to complete the Rutters Health Questionnaire while their child had a snack. Mothers of the disabled children were asked to participate in a semi-structural interview and a time was set. The interview focussed on the parents history of discovering their child's problem, perceived support and stress.

The Rutter Health Questionnaire (Rutter and Tizard, 1970) a 24 item yes-no questionnaire which refer to physical and psychological conditions considered to have an impact on a person's psychological status. A single score is obtained by totalling the number of symptoms. Higher score indicates a great amount of stress.

Ira Gordons reciprocol coding system (1976) was utilized to analyze the behavioural sequence of mother and child. It permited simultaneous coding of 9 behaviors of mother and child. The nine behaviours were:

1. Warms
2. Accepts
3. Amplifies
4 Elicits
5 Responds
6 Initiates
7 Directs
8 Corrects
9 Cools

The teaching situation was designed to elicit a different style of interaction from both mother and child. The other was given a wooden form board and 4 cutout shapes. They were asked to "teach their child something about this toy which they felt was appropriate for the child to learn". The situations were counterbalanced.

Results

Mothers of children with disabilities reported experiencing a wider range of stress symptoms with a mean of 3.6 while mothers of nondisable children reported fewer symptoms with a range which was almost equal to the mean of the entire group x = 2.0. The distributions are reported in TABLE 6.

TABLE 6

Distribution of Stress Symptoms Reported By Mothers on the Rutter Health Questionnaire

	$\bar{x}$	Range	t	p
Mothers of Disabled Children	3.60	1 - 8	1.71	
Mothers of Nondisabled Children	2.1	0 - 4		<.10

All mothers of children with disabilities reported experiencing some of the symptoms listed in the questionnaire and 70% reported experiencing three or more symptoms (range 1 - 8). In this group, the most common symptoms reported were:

recurrent backaches
chronic fatigue
headaches
constant worry
finding others irritable
being easily upset

Question (5) - Do you often worry about things? was responded to affirmatively by 8 (80%) of the 10 mothers of disabled children. No other symptom was reported by over 50% of either group.

Mothers of nondisbled children also reported stress symptoms although the number of symptoms experienced were somewhat fewer (range 0 - 4) than those mothers in the other group. Their primary symptoms were:

headache
being easily upset
stomachaches
worry

Again, question (5) - Do you often worry about things? was responded to affirmatively by 5 of the mothers in this group. An item analysis of the Rutter questionnaire appears in Appendix G.

Mothers were divided into two groups according to their stress scores. All those experiencing more than 3 symptoms were included in one group, all those experiencing 3 or fewer symptoms formed the second group. The former was labelled as the higher stressed group and the latter as less stress group. Slide 3 reports the means and 't' tests for the maternal behaviours predicted to be affected by stress.

Relationship Between Self Reported Maternal Stress and Affective Behaviours Towards Their Child

Maternal Behaviours	Situation	Frequency of Occurance Stress Group $\bar{x}$	t	Relative Duration Stress Group $\bar{x}$	t	f
Correct	Play	.50(L) 1.0 (H)	-1.01	.55 1.25	0.71	NS
	Teach	3.58(L) 1.62(H)	.99	3.89 2.73	.45	NS
Cool	Play	.08(L) 1.62(H)	-1.57	.07 1.42	-1.28	.08
	Teach	4.0 (L) 3.12(H)	.38	5.51 4.79	.25	NS
Direct	Play	5.5 (L) 2.87(H)	1.08	9.95 5.30	1.08	NS
	Teach	6.41(L) 6.12(H)	.09	8.87 10.81	- .56	NS

It can be seen that there was no significant differences between the means of the two groups on any of the three maternal behaviours. However, there was a trend in the predicted direction. Mothers in the higher stress group tended to show more negative affect (cooling) more often in the free play situation ($p>.08$).

*p.08

Because the hypothesis predicted a directionality the 'p's' reported are one-tailed.

Results of Analysis of Variance (Repeated Measure) of Effects of Self Reported Maternal Stress on Maternal and Child Behavior Categories Activity Behaviors

Maternal Behavior Categories	Mean Square	F	p
Elicits:			
situation x stress category	167.56	6.30	<.05
Responds:			
siutation x stress category	24.45	4.70	.05
Initiates:			
group x stress category	15.17	4.76	.05
Child Behavior Category			
Elicits:			
situation x stress	23.81	3.9	.07
Amplifies:			
situation x stress	1021.51	6.56	<.05

The second question dealt with the relationship between self reported maternal stress and mother-child interactions in two activity situations. These results will be reported separately for mothers and children. This is done in the hopes of simplifying the reporting of the data.

I. Mothers with higher stress

a) there was a trend towards more negative affects, ie. cooling behaviors in play situations (p.08).

b) higher stress - mothers showed similar amounts of eliciting of behavior from their child in the two situations - play and teach. ie. They didn't differentiate on basis of the situation. Mothers with lower stress levels elicited more from their children in the teaching situation, ie. lower stressed mothers were able to respond based on the situational differences ($f6.30$, $p<.05$).

c) higher stressed mothers were less responsive to their children in both play and teaching situations than were lower stressed mothers. As well, higher stressed mothers become even less responsive as they functioned in the teaching situation than in the play situation.

d) higher stressed mothers with disabled children initiated activities more often than did higher stressed mothers who did not have disabled kids (any group). This suggests that higher stressed mothers were initiating and leading (directing the behaviors of their disabled children rather than responding to their child's eliciting behaviors.

II. The Activity Patterns of Children of More Highly Stresed Mothers

Children of highly stressed mothers exhibited more amplifying behavior, that is, the children engaged in self-initiated activities more of the time than did children of lower stressed mothers across both experimental situations.

For children, maternal stress appeared to have a major impact on the eliciting behavioural category. 'Child elicits' was scored when a child would indicate a request for the mother to take or do something with the child, ie. an object, help, assistance. Children of lower stressed mothers elicited less from their mothers in the teaching situation than did all others groups and most frequently in the play situation. Whereas children of higher stressed mothers elicited, or tried to engage their mothers more in the structured teaching situation than in play, although the difference between the two situations was not as large.

In the present study, which used the Rutter Health Questionnaire, mothers with 4 or more reported stress symptoms were included in the high stress grouping. The difference between the groups, although not statistically significant, does reflect a higher degree of reported stress symptoms among mothers of disabled children. These results and the specificity of the

symptoms reported, is not unexpected, given the age range of children in the study and the nature of the children's disabilities. Almost all of the mothers of disabled children reported "worrying about things", a theme echoed in the interviews. Mothers expressed a lack of knowledge about the future, a "Living day to day attitude"... "I don't know what the future will bring... I try not to think about it"... "I guess when they know they'll tell me"... "We ask everyone when he'll walk but no one will tell us, or maybe they don't know". This lack of what McPhee (1982) refers to as a knowledge base, an understanding and anticipation of what and when certain child development physical milestones and behaviours are likely to occur is absent from the framework of the parents of physically disabled children. These parents are unable to relate to their child's behavior, impute meaning to it and to development a frame of reference on which to build a set of expectations. This lack of expectations and a normative framework is itself anxiety-producing; parents seek out information and a framework around which to conceptualize their child. They do this from doctors and other health care professionals (Voysey 1974; Illich, 1977). The power and pull of the health care professional is especially strong for several reasons, they are seen as 'experts' by parents who have little previous knowlege about disabilities, and who are dependent upon them for information, justification, suggestions and the reformulation of a knowledge base. Compounding their need for information and understanding, parents of young disabled children may seem vulnerable and open to information and suggestions given to them because they may be feeling stressed and lack self-confidence in interacting with their child and in dealing with their own feelings of competence as parents. In this way, much of what mothers may do with their child may be viewed as prescriptive in form and in content.

These prescriptions may assume pre-eminence and come to alter or inhibit the mother's own style and intuitions regarding her child and interaction.

The Effects of Stress

The second question dealt with the relationship between self-reported maternal stress and maternal ~~controlling~~ interaction behaviours. Mothers who reported more stress showed more cooling and correcting behaviors towards their children than did mothers reporting fewer stress symptoms in the play situation, although these differences were not statistically significant.

Maternal stress did have an impact on other aspects of activity profiles. Mothers who reported fewer stress symptoms were more involved in eliciting behavior of their child in the teaching situation, than were more highly stressed mothers. This was contrasted with a reduced responsiveness on the part of more highly stressed mothers in the teaching situation. Hences mother with higher stress elicited less and responded less to their children in the teaching siutation. Reliable and consistent responsivity has been seen as having important implications in the child's development of an "effectance motive" ie, the knowledge that (s)he can (or cannot) have an effect on their world (Schaffer, 1977). Maternal nonresponsiveness will eventually have the effect of reducing or eliminating those activities (skills) which the young child is doing. To my knowledge, there has been only one study which has looked specifically at maternal stress and its effect on specific interaction variables. Marcovitch (1983) found no significant relationships between stress as measured by the Rutter Health Questionnaire and the Hassles Scale

and observed behaviours in play interactions. Using a "Coping with Stress Interview" which yeilded a Parental Coping Index, she found that mothers who reported more frustrations in coping with their disabled child, ie. handling their child well, less pleasure involved in various daily activites were less animated, expressed less positive affect and displayed less vocal appropriate behaviour towards their children in the play situations. Crnic, Greenberg, Ragozin, Robinson & Bashan (1983) used global ratings such as responsiveness, affective tone and gratification from interaction to determine the effect of stress and social support on inter-actions with infants. They found that mothers who reported greater stress as measured by the Life Experience Survey (developed by Sarason et al. in 1978) had infants who were less responsive in dyadic situations and were less responsive themseles. They posited a cyclical pattern in which higher maternal stress resulted in fewer positive feelings of mothers towards their infants and a reduced responsivity in them. The infants in turn, are less clear in the cues they provide to their mother which increased the mother's difficulties in interacting with her child and this has a compounding effect on maternal stress. Elkind (1982) has suggested that stess increases egocentric thinking. It may be that mothers experiencing higher degrees of stress are less able to engage and respond to their child because they are more self-involved and are less able to pick up the cues of their child. This hypothesis gains some legitimacy when one looks at the eliciting and amplifying behaviours of the children of high and low stressed mothers. Mothers who saw themselves as more highly stressed, had children who played (amplified) more of the time in both situations. As well, these mothers had children who tended to engage them in interactions (eliciting)

more often in the teaching situation. The more highly stressed mothers however, were less responsive in the teaching situation and elicited almost the same amount from their child in the two situations. ie. They did not differentiate between the requirements of the two situations. More highly stressed mothers who had disabled children initiated activities more often than highly stressed mothers of nondisabled children.

Disabled children elicited less than did nondisabled children. The general structure of the dyadic interactions in the teaching situation, involving mothers with higher levels of stress and their disabled, tended to be characterized by low general level of maternal eliciting and responding and a lower level of child eliciting and responsiveness. Each member of the dyad appeared not to be engaged with the other. It is interesting to note that within this framework of low interaction, children of mothers who are more highly stressed engage in significantly more amplified play across both situations. It appears that mothers who were more highly stressed were less engaging and responsive to their child, leaving their child more opportunities to engage in their own self-initatited activites much in keeping with Elkind's perspective of greater self-absorption by stressed persons.

The results of this small sample exploratory study suggests that self reported maternal stress does have a meditating effect on the patterns of interaction between mothers and their children. This warrants further research with a larger sample size. Play and teaching appear to be more similar and less enjoyable for mothers and disabled children. If as I have suggested, this may reflect the interventionist strategies of health care professionals as well as the families' our lack of reference, it is necessary for us to take a close look at parent-as-therapist and its impact on the mother-child dyad.

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